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EXAMINER	
NGUYEN, TOAN D	
ART UNIT	PAPER NUMBER
2616	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/764,712	DENT, PAUL W.	
	Examiner	Art Unit	
	Toan D. Nguyen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20,21,30-32 and 34-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *20,21,30-32 and 34-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 20, 31-32, and 34-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al. (US 5,561,842) in view of Prabhu et al. (US 4,479,226).

For claims 20 and 31, Ritter et al. disclose mobile radio network, comprising:

communicating between the plurality of base stations and radiotelephones (col. 1 lines 5-11) using a common plurality of spreading codes (col. 1, line 55), wherein each base station uses the common plurality of spreading codes (col. 1, lines 46-55).

However, Ritter et al. do not expressly disclose allocating cellular radiotelephone frequencies among said plurality of base stations according to a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a second one of said spreading codes. In an analogous art, Prabhu et al. disclose allocating cellular radiotelephone frequencies among said plurality of base stations according to a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a second one of said spreading codes (col. 5, lines 5-11, and col. 7, lines 6-9).

Prabhu et al. disclose wherein the first frequency allocation system comprise a first frequency reuse pattern, and wherein the second frequency allocation system comprises a second frequency reuse pattern (figure 5, col. 6, lines 27-29 as set forth in claim 31).

One skilled in the art would have recognized the allocating cellular radiotelephone frequencies among said plurality of base stations according to a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a second one of said spreading codes, and would have applied Prabhu et al.'s assignment code in Ritter et al.'s dynamic channel allocation based on the CDMA. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Prabhu et al.'s frequency-hopped single sideband mobile radio system in Ritter et al.'s mobile radio network with the motivation being transmit a different carrier frequency sequence assignment code to the mobile as it enters its cell (col. 7, lines 7-9).

For claims 32 and 34, Ritter et al. disclose mobile radio network, wherein the step of allocating frequencies for use in the plurality of cells comprises:

applying a first frequency reuse pattern for the first spreading code (figures 4a-b, references k_1-k_5 , col. 3, lines 44-60).

However, Ritter et al. do not expressly disclose applying a second frequency reuse pattern for the second spreading code; and allocating frequencies for use in the plurality of cells such that respective different frequency allocations are provided for

respective first and second spreading codes used in each of the cells. In an analogous art, Prabhu et al. disclose applying a second frequency reuse pattern for the second spreading code (col. 6, lines 27-30); and allocating frequencies for use in the plurality of cells (col. 7, lines 2-3) such that respective different frequency allocations are provided for respective first and second spreading codes used in each of the cells (col. 5, lines 5-11, and col. 7, lines 7-9).

Ritter et al. disclose wherein the step of allocating comprises:

adaptively allocating frequencies for use with the first spreading code according to a first adaptive allocation scheme (figures 4a-b, references k_1-k_5 , col. 3, lines 44-60); and Prabhu et al. in view of Ritter et al. disclose adaptively allocating frequencies for use with the second spreading code according to a second adaptive allocation scheme (col. 6, lines 27-30 as set forth in claim 34).

One skilled in the art would have recognized the second frequency reuse pattern for the second spreading code; and allocating frequencies for use in the plurality of cells such that respective different frequency allocations are provided for respective first and second spreading codes used in each of the cells, and would have applied Prabhu et al.'s assignment code in Ritter et al.'s dynamic channel allocation based on the CDMA. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Prabhu et al.'s frequency-hopped single sideband mobile radio system in Ritter et al.'s mobile radio network with the motivation being transmit a different carrier frequency sequence assignment code to the mobile as it enters its cell (col. 7, lines 7-9).

For claim 35, Ritter et al. disclose wherein said first and said second spreading codes comprises one of plurality of direct-sequence-modulation codes, a plurality of frequency-hopping codes, and a plurality of combined frequency-hopping/direct-sequence-modulation codes (col. 2, lines 3-4).

For claim 36, Ritter et al. disclose mobile radio network, comprising:

a plurality of code division multiple access (CDMA) cellular radiotelephone base stations (col. 1, lines 62-64) that communicate with radiotelephones on a plurality of frequencies (col. 1, lines 5-11), the base stations each using a common plurality of spreading codes and using the frequencies that are allocated among said plurality of base stations (col. 1, lines 46-55).

However, Ritter et al. do not expressly disclose frequencies are allocated for a first one of said spreading codes according to a first frequency allocation system and are allocated for a second one of said spreading codes according to a second frequency allocation system different from said first frequency allocation system. In an analogous art, Prabhu et al. disclose frequencies (col. 7, lines 2-3) are allocated for a first one of said spreading codes according to a first frequency allocation system and are allocated for a second one of said spreading codes according to a second frequency allocation system different from said first frequency allocation system (col. 5, lines 5-11, and col. 7, lines 6-9).

One skilled in the art would have recognized the frequencies are allocated for a first one of said spreading codes according to a first frequency allocation system and are allocated for a second one of said spreading codes according to a second

frequency allocation system different from said first frequency allocation system, and would have applied Prabhu et al.'s assignment code in Ritter et al.'s dynamic channel allocation based on the CDMA. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Prabhu et al.'s frequency-hopped single sideband mobile radio system in Ritter et al.'s mobile radio network with the motivation being transmit a different carrier frequency sequence assignment code to the mobile as it enters its cell (col. 7, lines 7-9).

For claim 37, Ritter et al. disclose wherein said common plurality of spreading codes is one of a plurality of direct-sequence-modulation codes, a plurality of frequency-hopping codes, and a plurality of combined frequency-hopping/direct-sequence-modulation codes (col. 2, lines 3-4).

For claim 38, Ritter et al. disclose wherein said first frequency allocation has a number of subscribers, and wherein said plurality of code division multiple access (CDMA) cellular radiotelephone base stations operate responsive to said number of subscribers of said first frequency allocation system such that cellular radiotelephone frequencies are allocated among said plurality of base stations according to said first frequency allocation system for a third one of said synchronized spreading codes (figures 4a-b, references k_1-k_5 , col. 3, lines 44-60).

For claims 39 and 40, Ritter et al. disclose mobile radio network, comprising:

a plurality of cells (col. 1, lines 5-7); and

a code reuse partitioning circuit (figure 4a-b, col. 3, lines 44-60).

However, Ritter et al. do not expressly disclose allocate frequencies for use in the plurality of cell such that respective different frequency allocations are provided for respective first and second spreading codes used in each of the cells. In an analogous art, Prabhu et al. disclose allocate frequencies for use in the plurality of cell such that respective different frequency allocations are provided for respective first and second spreading codes used in each of the cells (col. 5, lines 5-11, and col. 7, lines 6-9).

Ritter et al. disclose wherein the code reuse partitioning circuit is operative to apply a first frequency reuse pattern for a first spreading code (figures 4a-b, col. 3, lines 44-60) and Prabhu et al. disclose apply a second frequency reuse pattern (col. 6, lines 27-30) for a second spreading code (col. 7, lines 7-9 as set forth in claim 40).

One skilled in the art would have recognized the allocate frequencies for use in the plurality of cell such that respective different frequency allocations are provided for respective first and second spreading codes used in each of the cells, and would have applied Prabhu et al.'s assignment code in Ritter et al.'s dynamic channel allocation based on the CDMA. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Prabhu et al.'s frequency-hopped single sideband mobile radio system in Ritter et al.'s mobile radio network with the motivation being transmit a different carrier frequency sequence assignment code to the mobile as it enters its cell (col. 7, lines 7-9).

For claim 41, Ritter et al. disclose wherein the code reuse partitioning circuit is operative to adaptively allocating frequencies for use with the first spreading code according to a first adaptive allocation scheme and to adaptively allocating frequencies

for use with the second spreading code according to a second adaptive allocation scheme (figures 4a-b, col. 3, lines 44-60).

For claim 42, Ritter et al. disclose wherein the first spreading code and the second spreading codes comprises one of plurality of direct-sequence-modulation codes, a plurality of frequency-hopping codes, and a plurality of combined frequency-hopping/direct-sequence-modulation codes (col. 2, lines 3-4).

3. Claims 21 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al. (US 5,561,842) in view of Prabhu et al. (US 4,479,226) further in view of Kaufmann et al. (US 4,984,247).

For claims 21 and 30, Ritter et al. in view of Prabhu et al. do not expressly disclose wherein said step of allocating is preceded by a step of synchronizing said plurality of spreading codes among said plurality of base stations so that said periods of said plurality of spreading codes are concurrent, to produce synchronized spreading codes among said plurality of base stations. In an analogous art, Kaufmann et al. disclose wherein said step of allocating is preceded by a step of synchronizing said plurality of spreading codes among said plurality of base stations so that said periods of said plurality of spreading codes are concurrent, to produce synchronized spreading codes among said plurality of base stations (col. 7, lines 4-9).

Kaufmann et al. disclose the step of synchronizing said common plurality of spreading codes (col. 7 lines 4-9 as set forth in claim 30).

One skilled in the art would have recognized the wherein said step of allocating is preceded by a step of synchronizing said plurality of spreading codes among said

plurality of base stations so that said periods of said plurality of spreading codes are concurrent, to produce synchronized spreading codes among said plurality of base stations, and would have applied Kaufmann et al.'s code generators in Ritter et al.'s dynamic channel allocation based on the CDMA. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Kaufmann et al.'s digital radio transmission system for a cellular network, using the spread spectrum method in Ritter et al.'s mobile radio network with the motivation being to make full use of the advantage of the optimized codes (col. 7, lines 4-5).

Response to Arguments

4. Applicant's arguments filed 10/12/07 have been fully considered but they are not persuasive.

The applicant argues with respect to independent claim 20 on page 6, fourth paragraph that Prabhu does not teach allocating frequencies among cells differently for different spreading codes. The examiner disagrees. Prabhu teaches at col. 5, lines 5-11 (see figure 4, reference 24):"...broadcasts a plurality of assignment codes c1(t)-cM(t), such that transmitters 101-10M utilize the identical carrier-frequency-hopped sequences as receivers 201-20M, respectively. That is, assignment code c(t) related to carrier-frequency-hopped sequence f(t) is broadcast to transmitter 10j when receiver 20j is also assigned carrier-frequency-hopped sequence f(t) (allocating cellular radiotelephone frequencies among said plurality of base stations according to a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a

second one of said spreading codes means)." Prabhu teaches further at col. 7, lines 7-9:"...each base station may transmit a different carrier frequency sequence assignment code (a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a second one of said spreading codes means) to the mobile as it enters its cell."

The applicant argues with respect to claims 32, 36 and 39 on page 7, third paragraph, that Prabhu does not teach different frequency reuse patterns for different spreading codes. The examiner disagrees. Prabhu teaches at col. 5, lines 3-11 (see figure 4) that different carrier frequency sequence f1(t)-fM(t) are received assignment coded. At col. 6, line 29:"...some frequency bands must be reused." Therefore, Prabhu teaches that different carrier frequency sequence f1(t)-fM(t) (are received assignment coded) are reused (different frequency reuse patterns for different spreading codes means).

The applicant argues with respect to dependent claims 30, 31, 34, 35, 37, 38 and 40-42 on page 8, first paragraph that they are patentable at least by virtual of the patentability of the respective ones of independent claims 20, 32, 36 and 39 from which they depend. The independent claims 20, 32, 36 and 39 are rejected. Therefore, dependent claims 30, 31, 34, 35, 37, 38 and 40-42 are also rejected.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D. Nguyen whose telephone number is 571-272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TN
TN

Daniel Ryman

Daniel J. Ryman
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